

**What is Claimed is:**

1. A method for recycling rail, comprising:  
providing rail;  
heating the rail;  
slitting the rail to separate the rail into a first piece and a second piece; and  
deforming the first and second pieces of the rail.
2. The method of claim 1 wherein heating, slitting, and deforming the rail is accomplished in a single mill pass line.
3. The method of claim 1 wherein the rail is whole rail.
4. The method of claim 1 wherein the rail is heated to a plastic state.
5. The method of claim 1 wherein the rail comprises a lower portion, an upper portion, and a web portion linking the lower portion and the upper portion.
6. The method of claim 5 wherein the rail is slit across the web portion.
7. The method of claim 6 wherein the rail is slit across a hole formed in the web portion.
8. The method of claim 1 wherein the first and second pieces are deformed to have a generally uniform shape.
9. The method of claim 1 wherein the first piece is a flange and the second piece is a head.
10. The method of claim 9 wherein the flange and the head are deformed by passing the flange and the head through at least one reduction pass.

11. The method of claim 9 wherein slitting the rail and deforming the flange and the head, comprises:

- passing the rail through a first reduction pass;
- passing the rail from the first reduction pass to a first delivery guiding system;
- separating the rail into the flange and the head in the first delivery guiding system;
- passing the flange and the head from the first delivery guiding system to a first entry guiding system;
- passing the flange and the head from the first entry guiding system to a pair of pinch rolls;
- passing the flange and the head from the pinch rolls to a second delivery guiding system;
- passing the flange and the head from the second delivery guiding system to a conveyor line;
- passing the flange into a first flange entry guiding system and passing the head into a first head entry guiding system;
- passing the flange from the first flange entry guiding system into a second reduction pass;
- passing the flange from the second reduction pass to a first flange delivery guiding system;
- passing the head from the first head entry guiding system to the second reduction pass;
- passing the head from the second reduction pass to a first head delivery guiding system;
- passing the head from the first head delivery guiding system to a second head entry guiding system;
- passing the head from the second head entry guiding system to a third reduction pass;
- passing the flange from the first flange delivery guiding system to a second flange entry guiding system;
- passing the head from the third reduction pass to a second head delivery guiding system;
- passing the flange from the second flange entry guiding system to the third reduction pass;
- passing the flange from the third reduction pass to a second flange delivery guiding system;
- passing the head from the second head delivery guiding system to a third head entry guiding system;

passing the head from the third head entry guiding system to a fourth reduction pass;  
passing the flange from the second flange delivery guiding system to a third flange entry guiding system;  
passing the head from the fourth reduction pass to a third head delivery guiding system;  
passing the flange from the third flange entry guiding system to the fourth reduction pass;  
passing the flange from the fourth reduction pass to a third flange delivery guiding system.

12. A method for recycling rail in a single mill pass line, comprising:  
providing rail comprising a lower portion, an upper portion, and a web portion linking the lower portion and the upper portion;  
heating the rail;  
slitting the rail through the web portion to separate the rail into a first piece and a second piece; and  
passing the first piece and the second piece of the rail through at least one reduction pass to deform the first piece and the second piece, whereby the first piece and the second piece are deformed to have a generally uniform shape.

13. The method of claim 12 wherein the rail is heated to a plastic state.

14. The method of claim 12 further comprising passing the first piece and the second piece of the rail through a pair of pinch rolls.

15. The method of claim 12 further comprising passing the first piece and the second piece of the rail through at least one additional reduction pass to deform the first piece and the second piece into finished products.

16. A method for reducing structural defects in recycled rail, comprising:  
providing rail having a hole formed therein;

slitting the rail across the hole to separate the rail into a first piece and a second piece, whereby slitting the rail across the hole defines a partial hole in each of the first and second pieces; and

deforming the first and second pieces of the rail in at least one reduction pass, whereby deformation of the first and second pieces elongates the partial holes of the first and second pieces.

17. The method of claim 16 wherein slitting the rail across the hole reduces scrap associated with deforming the first and second pieces of the rail.